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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,719	11/29/2001	Masao Kato	1272.C0495	2605

5514 7590 07/31/2003

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EXAMINER

TRAN, LY T

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 07/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/995,719

Applicant(s)

KATO ET AL

Examiner

Ly T TRAN

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE filed 5/16/03.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-10 and 12-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,3-10 and 12-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/16/03 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-10, 12-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yano et al. (EP 496 533) in view of Kashino et al. (USPN 6,109,734).

With respect to claims 1 and 10, Yano et al. discloses a method for filling buffer chamber in a print head with bubble and an apparatus to print an image on a print medium comprising:

- A print head comprising a plurality of ejection opening, a plurality of channel (Fig.2 and 3) a common liquid chamber for supply ink to plurality

of channels, buffer portion (Fig.1: element 15) and a bubble generating means for filling the buffer portion with bubble (Fig.1) comprising step of:

- Filling the buffer portion with bubble by driving the bubble generating means (Column 8: line 24-58)
- Executing a recovery process of discharging the ink through the ejection openings after the bubble filling step (Column 18: line 49-50) wherein the recovery process step, excess of the at least one bubble filled in the buffer portion is removed (Column 16: line 57-58, Column 17: line 1-5, Column 18: line 49-57)

With respect to claims 3 and 12, Yano et al. discloses that during the bubble filling step, bubble is allowed to grow up to location of the channel adjacent to buffer chamber (Column 20: line 10-12).

With respect to claims 4 and 13, Yano et al. discloses the bubble generated by driving the bubble generating means is obtained by precipitating a gas dissolved in the ink (Column 19: line 9-11).

With respect to claims 6 and 15, Yano et al. discloses that plurality of channels are each provided with an electro-thermal converter as means for generating ejection energy that cause the ink to be ejected and during the bubble generating step, bubble is generated using the electro-thermal converter together with bubble generating means (Fig.20-22, Column 34: line 54-55)

With respect to claims 7 and 16, Yano et al. discloses the recovery process comprising sucking and discharge the ink through the ejection opening (Column 36: line 29-33).

With respect to claims 8 and 17, Yano et al. discloses recovery process is executed before a printing operation (Column 24: line 54-58, Column 25: line 1-3)

With respect to claims 9 and 18, Yano et al. discloses before the recovery process, the print head is heated at a temperature used for normal printing or higher (Column 24: line 30-58)

With respect to claims 5 and 14, Yano et al. discloses during the bubble-generating step, the bubble generating means is driven to generate bubble while preventing film boiling from occurring in the ink (Column 36: line 54-Column 36: line 18).

However, Yano fails to teach the buffer portion located at an end of an arrangement direction of the channels and adjoining at least one of the channels in communication with at least one corresponding ejection opening.

Kashino et al teaches the buffer portion Fig.8: element 306) located at an end of an arrangement direction of the channels (element 303) and adjoining at least one of the channels in communication with at least one corresponding ejection opening (element 301).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teaching of Yano to have the buffer portion located at an end of an arrangement direction of the channels and adjoining at least one of the channels in communication with at least one corresponding ejection opening as taught

by Kashino et al. The motivation of doing so is growth of bubbles in the bubble cell occurs only in the direction away from the array of the ink flows channels, thus suppressing tendency for such grown bubbles to reach the ink flow channels.

Response to Arguments

3. Applicant's arguments with respect to claims 1 and 10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ly T TRAN whose telephone number is 703-308-0752. The examiner can normally be reached on M-F (7:30am-5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 703-308-4896. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0967.



July 15, 2003



Stephen D. Meier
Primary Examiner